Ryan Chouest Data Summary
Cruise 6/20/2010

Review Date 6/21/2010

Summary:

This sampling report presents data collected from the Ryan Chouest for the period of 6/20/2010. Since 1350 hrs 06/19/2010 they have sailed on the new course towards Port St. Joe as planned.

Science results and preliminary interpretation:

Data recorded from the three fluorometer sensors show low to medium inferred hydrocarbon concentrations in the studied transect. The Chelsea fluorometer exhibited the lowest concentrations of the three sensors, with a region of slightly elevated concentrations at ~29º 45' N, 86 º 50' W. The Chelsea fluorometer data are lower on this cruise track than from previous tracks, despite traversing through a large oiling extent. These unusually low values may be due to baseline drift or seawater matrix effexts which are yet to be established.Additional calibration of all of the sensors will occur tomorrow to investigate the readings further. The Trios sensor recorded low to medium concentrations, generally in the lower to middle medium range of values. The pattern of increasing and decreasing fluorometer measurements is relatively consistent with the oiling extent for 06/19/2010. The Contros sensor shows the highest concentrations along the coastal transect. They observed many areas affected by a very light transparent surface sheen and some places with small, dispersed pieces of orange mousse. A very thin transparent surface sheen was the most common type of oil slick observed.

Vessel science operations:

The Ryan Chouest continued to log fluorometer measurements, observe/photo document sea surface conditions and collect samples for onboard separation and GCMS analysis.

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Planned route vs. Actual route taken:

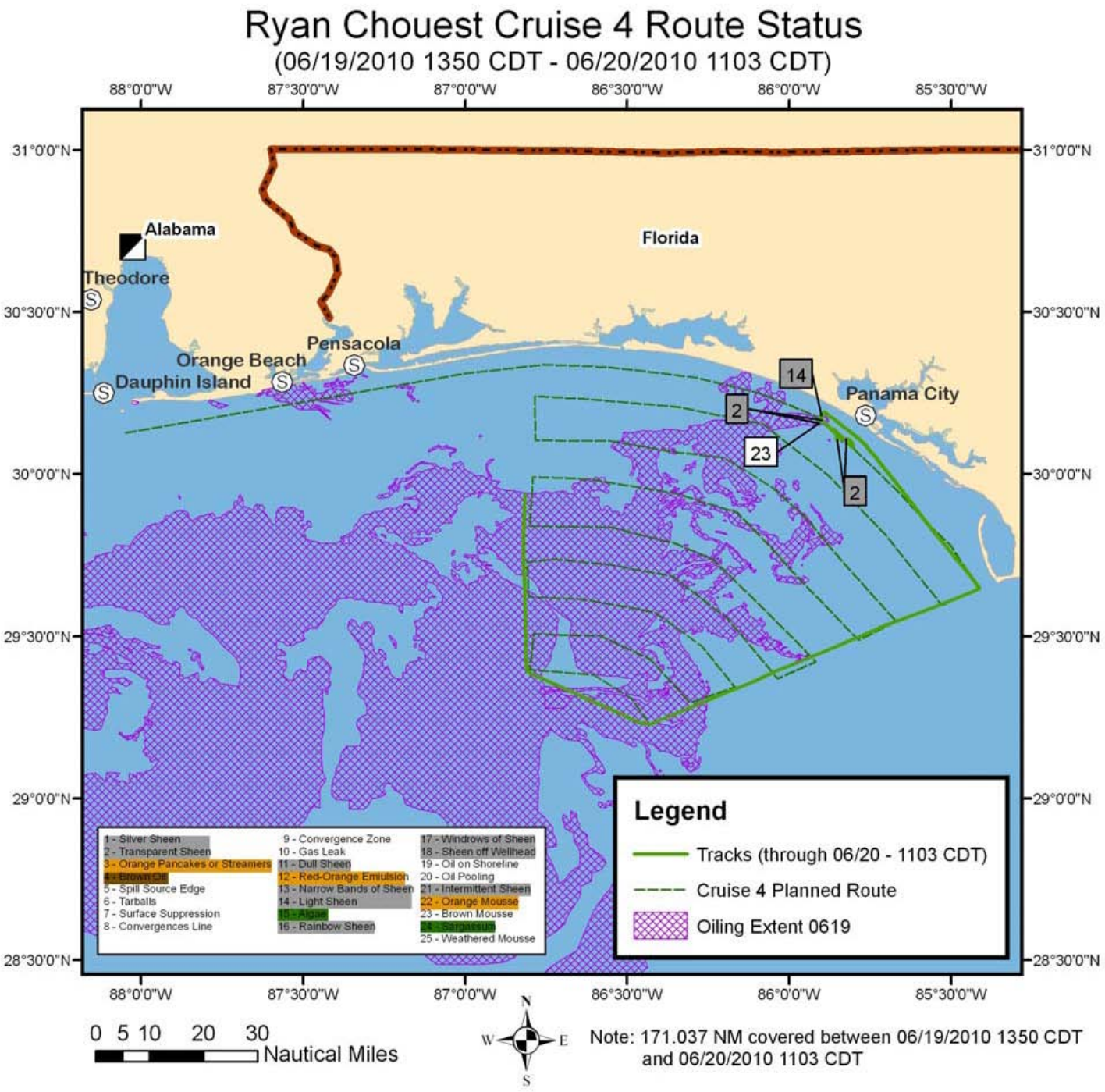

Figure 1: Planned versus actual route course plotted between 06/19/2010 –06/20/2010. Purple shaded area represents outline extent of the slick from 06/19 ERMA composite.

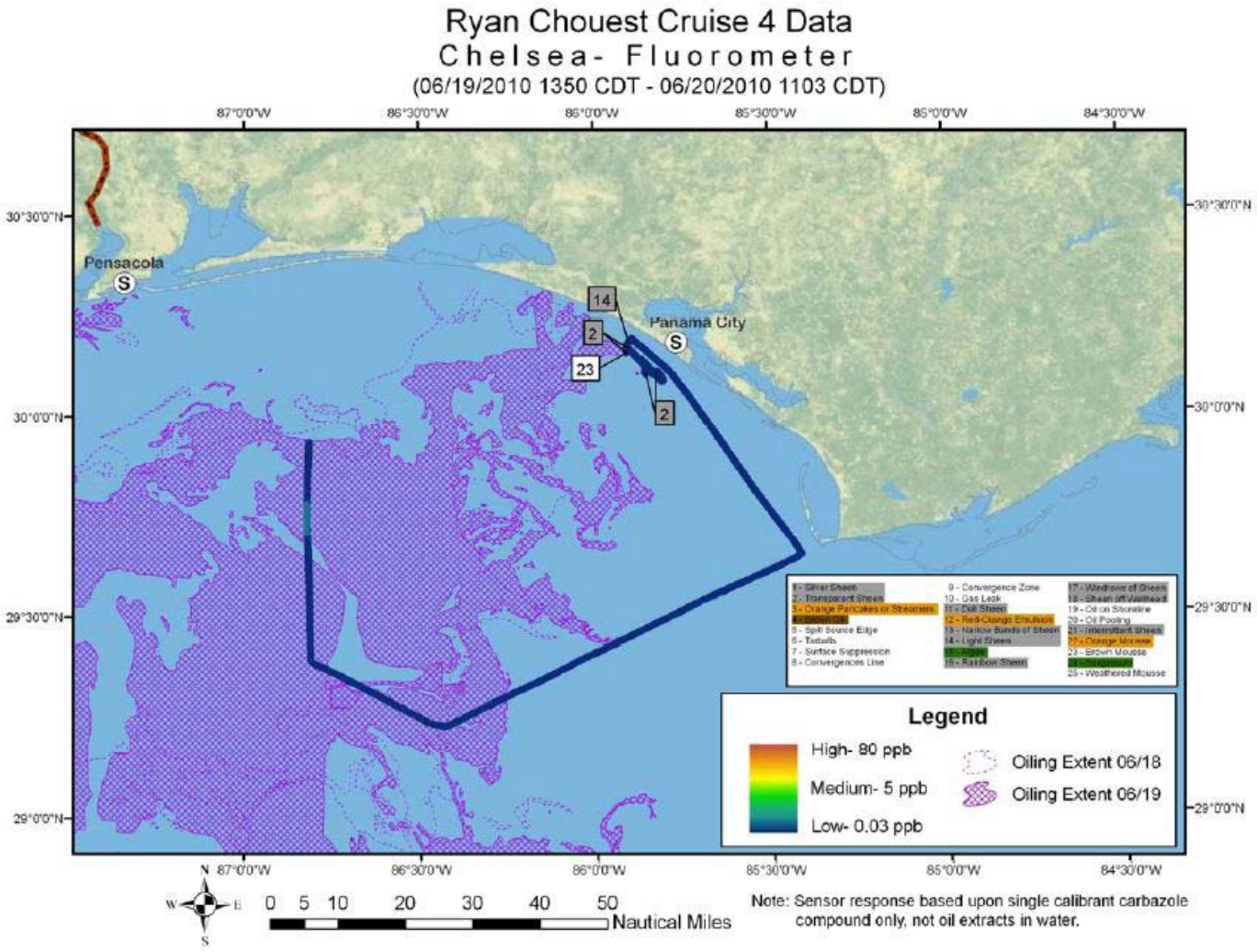

Figure 2: Chelsea fluorometer results plotted with location on cruise 4 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

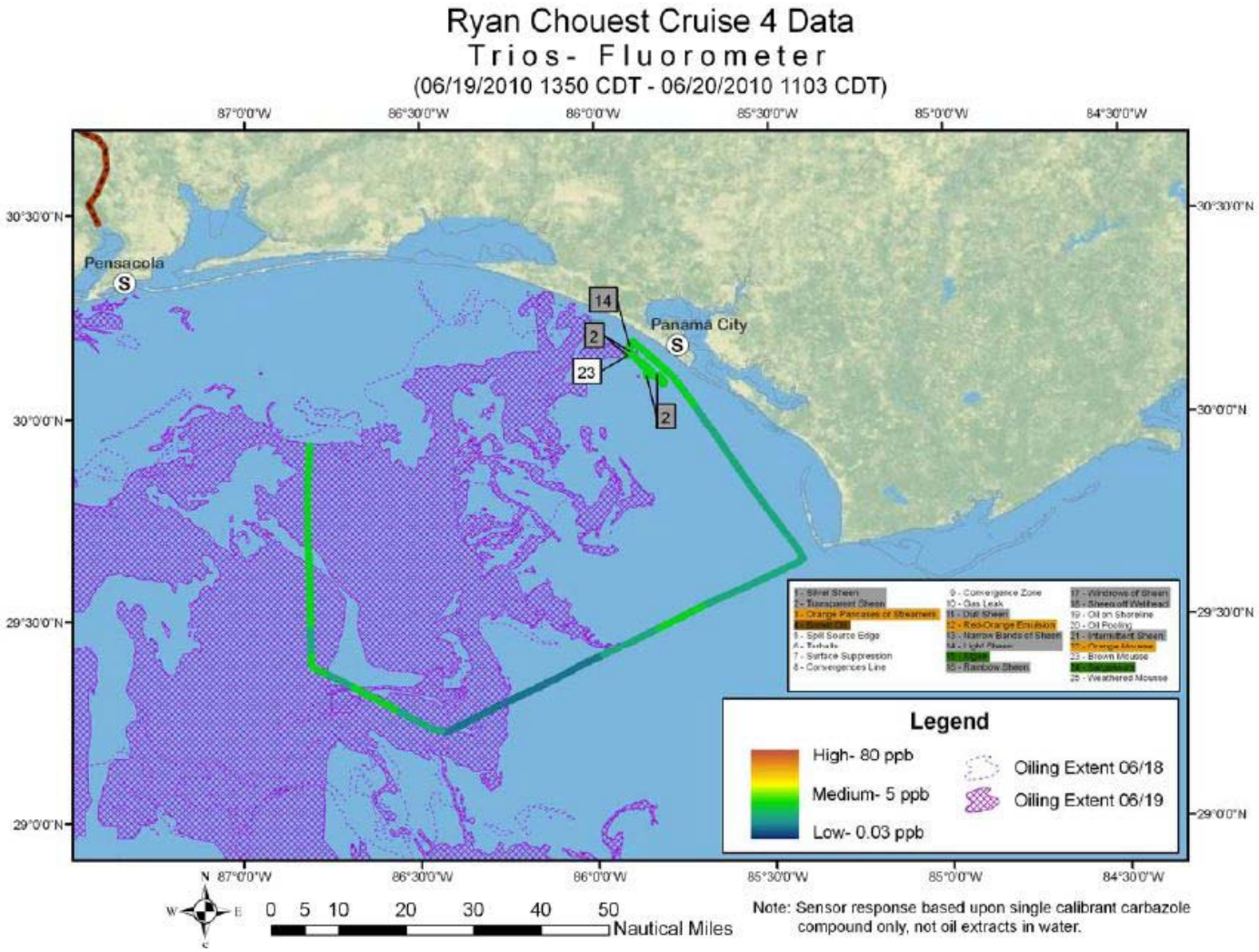

Figure 3: Trios fluorometer results plotted with location on cruise 4 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

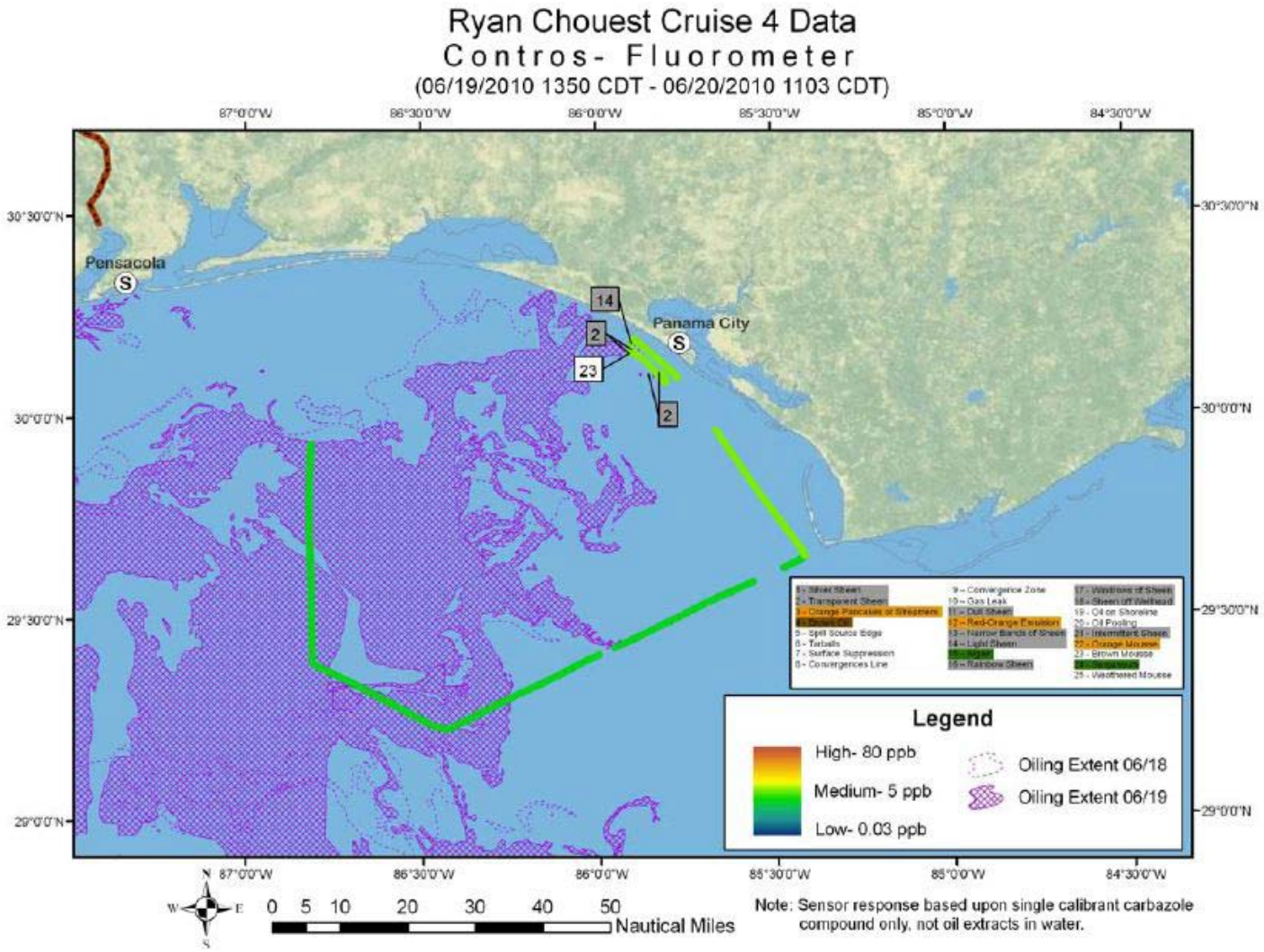

Figure 4: Contros fluorometer results plotted with location on cruise 4 track. Breaks in data occur when either data quality is poor or the systems were turned off due to pump problems.

Problems/operational issues:

The swivel block at the end of the jib crane swiveled too much and interfered with efficient unreeling of the hose. Members of the crew removed it and welded it into a fixed, non-swiveling position. They unraveled the hose and reattached the electrical cord with sufficient slack to prevent the plugs from becoming detached during deep fluorometer casts. At 1700 hrs, they stopped the ship and deployed the hose and pump on a deep fluorometer system test with some success, but two problems did occur. Almost all of the tape that attaches the electrical cord and winch wire to the hose tore during hose retrieval, but all of the cable ties remained fastened. Also, one of the electrical cord connections was sheared as it was brought through the rollers on the jib as the hose was reeled in. The pump worked on the way down and up until the electrical connection was severed. Further experiments using a shorter assembly will occur at other points in this cruise. However, a sheathed EM cable should be used for the deeper casts as it both takes the weight of the assembly and also provides the electrical connection to the pump. They are investigating a new electrical cable that may be obtained back in Theodore, Alabama.

Planned activities for next 24 hours:
The Ryan Chouest will continue to make transects NW to SE and collect water/mousse samples at suitable locations. Further trials of the casting system will occur in order to attempt to characterize the photic zone waters. Further sampling and geochemical testing will also occur.

Photographs
The Ryan Chouest provided the following photographs in their Daily Report:

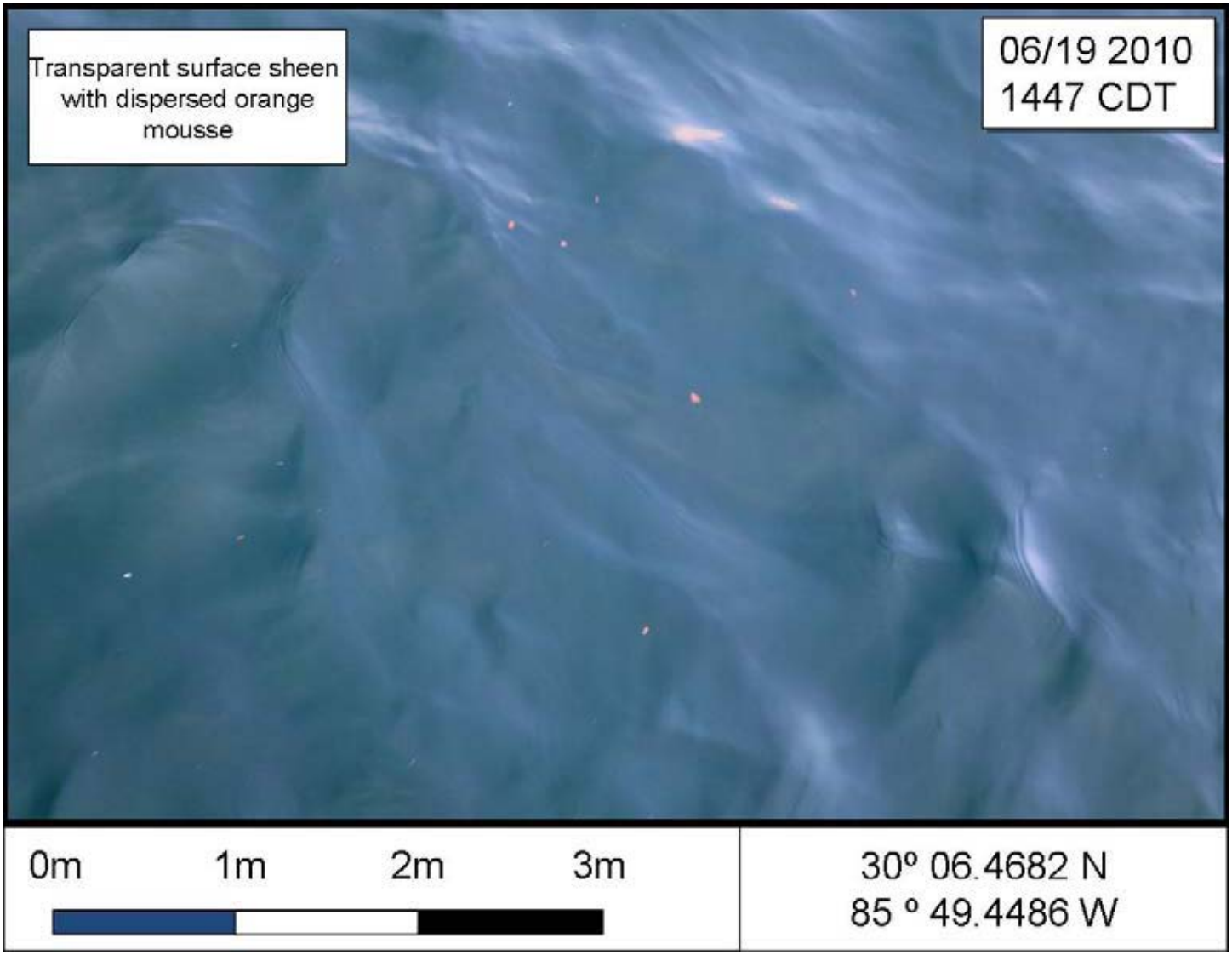

Photo 1: Transparent surface sheen with several noticable pieces of dispersed mousse approximately 1 to 7 cm in diameter.

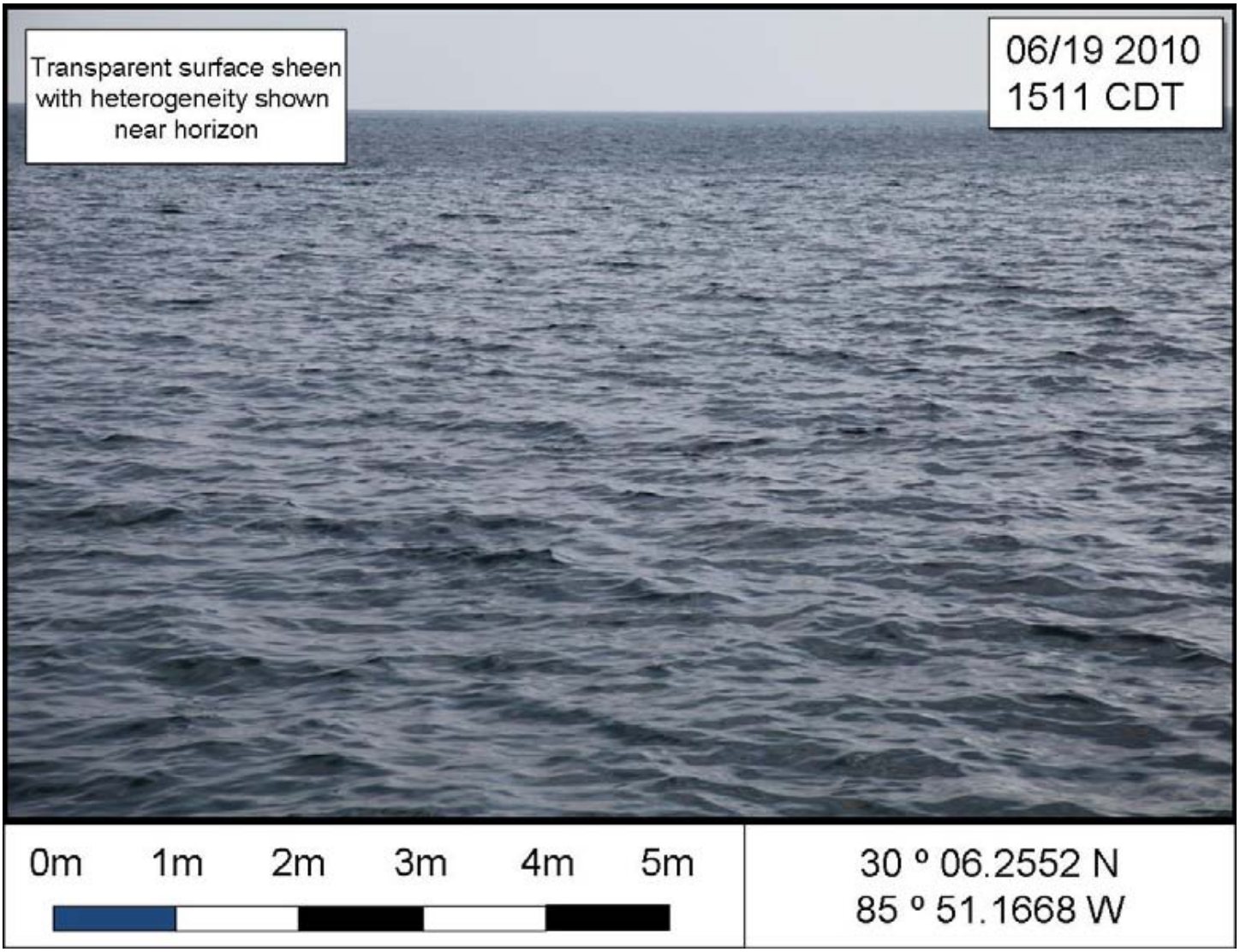

Photo 2: Transparent surface sheen with no observable mousse. Note the linear pattern near the horizon that shows differences in the ocean's surface reflectance from the observation point, which can be likely attributed to sheen variability.

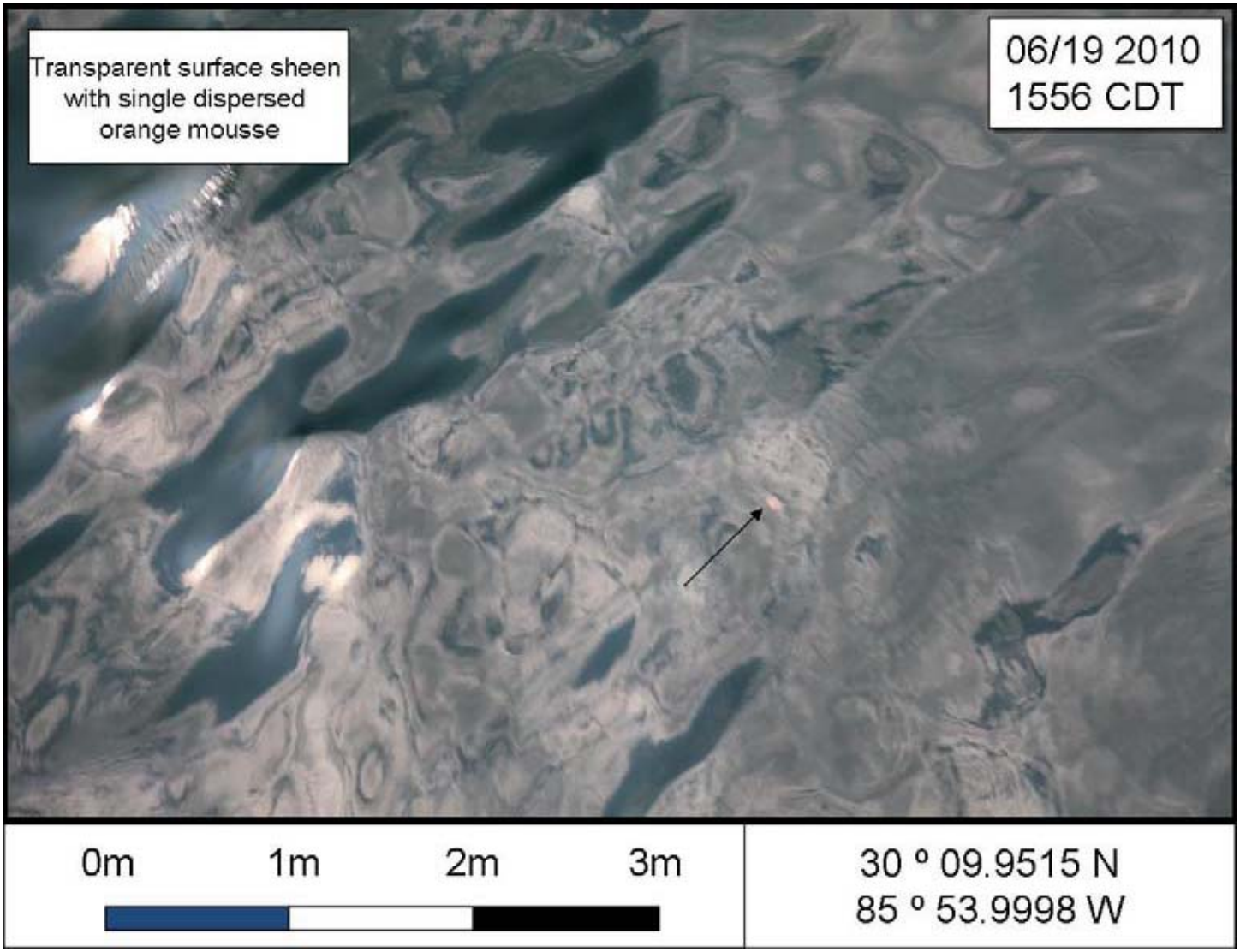

Photo 3: Transparent surface sheen with a single piece of orange mousse, approximately 4 to 5 cm in diameter. This image better illustrates the optical characteristics of transparent type sheens.